

NHS Outcomes Framework

Domain 2

Enhancing quality of life for people with long-term conditions

Indicator specifications

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Document Management

Revision history

Version	Date	Indicator	Summary of Changes
1.0	May 2011	2.3.ii	Indicator introduced
1.1	November 2011	2.2 2.3.i 2.5.i	Indicator introduced
1.2	March 2012	2.2 2.3.i 2.3.ii 2.5.i	Breakdown details added
1.3	June 2012	2.3.i 2.3.ii	Indicator now indirectly standardised
1.4	September 2012	2.2 2.5.i	Breakdown details added
		2.6.i	Indicator introduced
1.5	December 2012	2.3.i 2.3.ii	Indicator standardised to 2011/12 using 2011 mid-year population estimates
1.6	March 2013	2.3.i	Indicator now includes children
1.7	September 2013	2 2.1 2.4	Indicator introduced
1.8	December 2013	2 2.4	Contextual indicator (health related quality of life for all GP Patient Survey respondents) published
		2.3.i 2.3.ii	Data indirectly standardised to the 2012 mid-year population estimates
1.9	February 2014	2 2.1 2.4	New calculation methodology (direct standardisation)
		2.3.i 2.3.ii	Release of data for all years with revised ONS population estimates based on the 2011 Census
1.10	May 2014	2.3.i 2.3.ii	Further disaggregations published (upper tier local authority, region and annual figures)
1.11	August 2014	2 2.1	Addition of long-term condition breakdown
		2.3.i 2.3.ii	Update of specification to refine HES filters and include an additional ADMIMETH filter (data unaffected)
1.12	November 2014	2 2.1	Survey response rates published for all data periods and relaxation of suppression rules

		2.4	
		2.3.i	Amendment to HES filters within the specification (data unaffected)
1.13	February 2015	2.3.i 2.3.ii	Deprivation decile breakdown added
1.14	September 2015	2 2.1 2.4	Clarification of disclosure control
1.15	November 2015	All	Revision history has been consolidated
1.16	February 2016	2	Health inequality (area deprivation) introduced
1.17	May 2016	2.7	New indicator introduced
		2.2 2.5.i	Updated links to ONS publication
1.18	August 2016	All	Updated formatting and links
1.19	November 2016	2.2 2.5.i	Person level weight field details added
1.20	February 2017	2.3.i 2.3.ii	Updated deprivation sections. Calculation sections revised to give more clarity.
1.21	May 2017	2.4	Corrected responses to questions in data filters section
		2.6.i	Updated links to Dementia UK 2007 report and QOF publications
		2.7	Corrected indicator title
1.22	August 2017	2 2.1 2.7	Updated data filters and period of coverage
		2.2 2.5.i	Updated person weights section
		2.4	Updated period of coverage
1.23	May 2018	All	Links updated throughout document Dates updated to 2018 Department of Health changed to Department of Health and Social Care Secretary of State changed to Secretary of Health and Social Care

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2 Health-related quality of life for people with long-term conditions

Indicator assurance

Status	Date
Methodology Review Group (MRG) recommended	July 2013, January 2014 (recommended based on direct standardisation methodology)
Indicator Governance Board (IGB) assured	April 2014

Overview

Indicator title

2 Health-related quality of life for people with long-term conditions

Indicator family name

NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions

Overarching indicator

Outcome sought

Improved health-related quality of life for people with long-term conditions.

Detailed Descriptor

Plain English description

This indicator measures health-related quality of life for people who identify themselves as having one or more long-standing health conditions. Health-related quality of life refers to the extent to which people:

- have problems walking about;
- have problems performing self-care activities (washing or dressing themselves);
- have problems performing their usual activities (work, study etc.);
- have pain or discomfort;
- feel anxious or depressed.

Technical description

The directly standardised average (mean) EQ-5D™ score for people self-reporting one or more long-term conditions.

Alignment with other Outcome Frameworks

Complementary to Adult Social Care Outcomes Framework Indicator 1A

Data sources

GP Patient Survey (GPPS) from Ipsos MORI (<http://www.gp-patient.co.uk/>) – Official Statistics

Published annually - from 2016/17 onwards one survey wave covers January – March, prior to this two survey waves per year covered July – September and January – March.

As of February 2018, further updates for this indicator are currently to be confirmed.

Construction

Calculation methodology

Introduction

Indicator 2 is the overarching indicator for domain 2 of the NHS Outcomes Framework.

The indicator is based on a large survey of adults registered with a GP Practice in England. The GP Patient Survey is commissioned by NHS England and is conducted by the independent survey organisation Ipsos MORI. Current and previous years' survey questionnaires are available from the link in the data sources section.

Patients are eligible for the survey if they have a valid NHS number, they have been registered with a GP in England continuously for six months or longer before the questionnaire is received, and they are at least 18 years old six months before the questionnaire is received. Additionally, to reduce survey fatigue, patients are not to receive more than one GP Patient Survey in any 12-month period. Details regarding eligibility, participation and sampling for each survey are available in a technical annex from the link in the data sources section.

Data filters

Data are filtered based on questions from the GP Patient Survey, to isolate those who report one or more long-term conditions. Respondents are identified as having a long-term condition if they answer 'Yes' to the following question.

Do you have a long-standing health condition?

- Yes
- No
- Don't know/can't say

If respondents fail to acknowledge their long-term condition in this question (those who answer 'No' or 'Don't know/can't say') but tick a condition in the next question, they are also classed as having a long-standing health condition:

Which, if any, of the following medical conditions do you have? Please x all the boxes that apply to you:

- Alzheimer's disease or dementia
- Angina or long-term heart problem
- Arthritis or long-term joint problem
- Asthma or long-term chest problem
- Blindness or severe visual impairment
- Cancer in the last 5 years
- Deafness or severe hearing impairment
- Diabetes
- Epilepsy
- High blood pressure
- Kidney or liver disease
- Long-term back problem
- Long-term mental health problem
- Long-term neurological problem
- Another long-term condition
- None of these conditions
- I would prefer not to say

Note: Learning difficulty used to be presented as an option in the above list but was removed from the 2015/16 GPPS onwards as it is generally not considered a long-term condition.

All invalid responses (where there is no value for gender or age or any other of the breakdown variables) are excluded from the calculation.

Only people resident in an English region are included in the indicator (only includes records where GOR_Name <> Wales).

Calculation

Denominator

The denominator is the weighted count of responses from all people who identify themselves as having a long-term condition:

$$\Sigma_k(wt_new_k)$$

where $k = 1, \dots, p$ are respondents with a long-term condition.

Numerator

Health-related quality of life is measured using the EQ-5D™ instrument which asks respondents to rate their health in five different areas. The ratings are collected through the following question in the survey :

By placing an (x) in one box in each group below, please indicate which statements best describe your own health state today.

The possible responses are:

Mobility

- I have no problems in walking about
- I have slight problems in walking about
- I have moderate problems in walking about
- I have severe problems in walking about
- I am unable to walk about

Self-Care

- I have no problems washing or dressing myself
- I have slight problems washing or dressing myself
- I have moderate problems washing or dressing myself
- I have severe problems washing or dressing myself
- I am unable to wash or dress myself

Usual Activities (e.g. work, study, housework, family or leisure activities)

- I have no problems doing my usual activities
- I have slight problems doing my usual activities
- I have moderate problems doing my usual activities
- I have severe problems doing my usual activities
- I am unable to do my usual activities

Pain / Discomfort

- I have no pain or discomfort
- I have slight pain or discomfort
- I have moderate pain or discomfort

- I have severe pain or discomfort
- I have extreme pain or discomfort

Anxiety / Depression

- I am not anxious or depressed
- I am slightly anxious or depressed
- I am moderately anxious or depressed
- I am severely anxious or depressed
- I am extremely anxious or depressed

The answers to these questions are converted into an index by applying a formula that attaches values (also called weights) to each of the levels in each dimension. The weights are based on an empirical study, which asked people to quantify the extent to which they would sacrifice quantity of life in order to gain improvements in quality of life, at various states of health (see Dolan et al¹ and Szende, Oppe and Devlin² for details).

Individual EQ-5D™ index scores range between -0.594 and 1.000. The highest value is assigned to patients who report the best possible health state for each of the five domains.

The numerator is the sum of the weighted EQ-5D™ index values for all responses from people who identify themselves as having a long-term condition.

This is calculated as: $\sum_i (EQ - 5D^{\text{TM}} \times wt_new_i)$

where $i = 1, \dots, m$ are respondents who identify themselves as having a long-term condition.

2011/12 data are based on the EQ-5D-3L™ instrument, which provided respondents with three possible answers under each of the five domains. From 2012/13 onwards, the EQ-5D-3L™ was replaced with the EQ-5D-5L™ instrument which provides respondents with five possible answers under each domain as shown on the previous page.

Whilst preference weights for the new instrument are under development, a crosswalk to translate 3L index values into 5L index values has been devised. Details of the crosswalk methodology and results can be found on the EuroQol website:

<https://euroqol.org/wp-content/uploads/2017/03/PIIS1098301512000587.pdf>

https://euroqol.org/wp-content/uploads/2017/02/EQ-5D-5L_Crosswalk_model_and__methodology.pdf

¹ Dolan P et al. 1995. A social tariff for EuroQol: Results from a UK general population survey. Discussion Paper No 138. Centre for Health Economics, University of York, York.

² Szende, A., Oppe, M., and Devlin, N. 2006. EQ-5D™ value sets: Inventory, comparative review and user guide. Eds. EuroQol Group Monographs Volume 2. Springer, 2006.

EQ-5D™ is a registered trademark of EuroQol. Further details are available from <http://www.euroqol.org>.

EuroQol Group gave written permission to the Department of Health on 2 May 2011 to use the EQ-5D™ questions only in this format (without the visual analogue scale) for the GP Patient Survey and are happy for it to be referred to as EQ-5D™.

Weighting

A weight is applied to construct the indicator. The GP Patient Survey includes a weight for non-response bias (wt_new). This adjusts the data to account for potential differences between the demographic profile of all eligible patients in a practice and the patients who actually complete the questionnaire. The non-response weighting scheme has been developed by Ipsos MORI, incorporating elements such as age and gender of the survey respondent as well as factors from the area where the respondent lives such as level of deprivation, ethnicity profile, ACORN classification and so on, which have been shown to impact on non-response bias within the GP Patient Survey. Ipsos MORI are also investigating whether respondents have systematically different outcomes to non-respondents, even after the non-response bias weighting has been applied.

Further information on the current weighting scheme is provided in the survey's technical annex which can be found using the link in the data sources section.

The following document contains important information about the weighting methodology change in 2011-12:

<https://gp-patient.co.uk/weighted-data>

Standardisation

The indicator values are directly standardised. The directly age and gender standardised mean EQ-5D™ score is the score a standard population would have if that population were to experience the age and gender specific scores of the subject population.

The directly standardised score (DSS) is given by:

$$DSS = \frac{1}{\sum_i w_i} \times \sum_i \frac{w_i O_i}{n_i}$$

where:

O_i is the observed number of events in the local or subject population in age and gender group *i* (sum of weighted EQ-5D™ scores in the respective age and gender group for all respondents who identify themselves as having a long-term condition)

n_i is the number of individuals in the local or subject denominator population in age and gender group *i* (sum of all weighted responses (wt_new) in the respective age and gender group for all respondents who identify themselves as having a long-term condition)

w_i is the number of individuals in the reference or standard population in age and gender group *i* (sum of all weighted responses (wt_new) in the respective age and gender group for all respondents to the GPPS)

The standard population used for the direct standardisation method are all persons who responded to the GP Patient Survey in the respective financial year. The age groups used in the calculation are 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 to 84, 85+.

Contextual Information

A contextual indicator showing the average health status score for all GP Patient Survey respondents at national level and for each of the breakdowns is calculated. This information aims to aid the interpretation by providing comparison of the health-related quality of life for people who identify themselves as having a long-term condition to the whole GP Patient Survey population.

The survey response rate is measured as the unweighted number of total survey respondents as a percentage of the number of questionnaires sent. This is available at national level and for breakdowns by age, gender, lower and upper tier local authority as well as region. Survey response rates cannot be calculated for breakdowns by ethnicity, sexual orientation, religion, deprivation and number of long-term conditions as the number of surveys sent out cannot be determined at these levels.

Health inequality (area deprivation)

Once the underlying indicator values have been generated for each deprivation decile a set of summary measures describing the extent of health inequality is calculated.

The slope index of inequality (SII) is a measure of the social gradient in health related quality of life, i.e. how much this varies with deprivation. It takes account of health inequalities across the range of deprivation deciles and summarises this in a single number. This represents the range in health related quality of life across the social gradient from most to least deprived, based on a statistical analysis of the relationship between health related quality of life and deprivation across all deprivation deciles.

An SII value of 0.150 in the context of this indicator shows that the range in average health-related quality of life score for those with a long term condition across the social gradient from most to least deprived is 0.150. Reducing the SII value is desirable, a value of zero indicates equality.

The SII is calculated using population-weighted linear regression. To allow for differences in population size between deprivation deciles, each is given a rank score based on the midpoint of its range in the cumulative distribution of the population. The deciles are first ordered from most deprived to least deprived. If decile 1 contains 12% of the population, its rank score would be $12/2=6$. If decile 2 includes 10% of the population, its rank score would be $12+(10/2)=17$. The average EQ-5D™ score is plotted against this rank score and a population-weighted regression line is fitted to the data by the least squares method. The SII is the gradient of the resulting fitted line.

The calculation of the SII is performed using the inequalities calculation tool supplied by Public Health England ³

Explicitly, the SII is calculated as:

³

<http://webarchive.nationalarchives.gov.uk/20170106081903/http://www.apho.org.uk/resource/item.aspx?RID=132634>

$$SII = \frac{\sum wxy - (\sum wx \cdot \sum wy)}{\sum wx^2 - (\sum wx)^2}$$

Where:

w is the percentage of the population in the deprivation group

x is the cumulative proportion of the population at the mid-point of the deprivation group

y is the indicator value of the deprivation group

The 95% confidence interval for the SII is given by

$$CI = SII \pm t_{n-2}(0.975) * \sigma_{SII}$$

Where

n is the number of deprivation groups

$t_{n-2}(0.975)$ represents the inverse value of the t distribution with n-2 degrees of freedom for a probability of 0.975

σ_{SII} is the standard error of the SII, given by

$$\sigma_{SII} = \sqrt{\frac{1}{n-2} * \frac{\sum w(y - \hat{y})^2}{\sum wx^2 - (\sum wx)^2}}$$

Where

n is the number of deprivation groups

w is the percentage of the population in the deprivation group

x is the cumulative proportion of the population at the mid-point of the deprivation group

y is the indicator value

$\hat{y}$ is the predicted y value calculated as

$$\hat{y} = SII \cdot x + b$$

Where b is the intercept of the regression line, calculated as:

$$b = \frac{(\sum wx^2 \cdot \sum wy) - (\sum wx \cdot \sum wxy)}{\sum wx^2 - (\sum wx)^2}$$

The SII measures the absolute extent of difference in health related quality of life for those with a long term condition between the most and least deprived deciles.

The SII is related to the mean health score of the population. For example, if health scores for all deprivations deciles increased by 10 per cent, then the SII would increase by 10 per cent, i.e. the absolute difference between the most and least deprived decile has widened.

The Relative Index of Inequality (RII) provides a different perspective on the level of health inequality by considering how the level of health inequality compares with the overall level of the indicator.

In the example above, where all values increase by 10 per cent, the RII would remain constant, indicating that although there is a growing inequality it is the case that the extent of the inequality is stable when compared to the mean health score.

An increase in the RII value indicates that the extent of the inequality is increasing as a proportion of the overall indicator value. A reduction of the RII over time is therefore desirable. The relative index is calculated as the slope index divided by the mean weighted indicator value (Y):

$$RII = \frac{SII}{\overline{wY}}$$

Where

w is the percentage of the population in the deprivation group

y is the indicator value

The confidence intervals of the RII are calculated from the SII confidence intervals as:

$$RII\ CI\ lower = \frac{CI\ lower}{\overline{wY}}$$

$$RII\ CI\ upper = \frac{CI\ upper}{\overline{wY}}$$

Presentation

Breakdowns

Time periods

Annual data from 2011/12

Demographic

10-year age bands from 18 - 24 to 85 and over

Gender (Males and females)

Ethnicity

Sexual orientation

Religion

Deprivation deciles (from 1 – most deprived to 10 – least deprived)

Number of long-term conditions (One to four plus)

Geographic

England

Lower tier local authority

Upper tier local authority

Region

Slope index of inequality

Relative index of inequality

Disclosure control

For GPPS-based domain 2 indicators there are four different types of suppression that may be applied:

- Where several numbers are missing from the direct standardisation calculation, the values produced will not be robust. The direct standardisation used for this indicator is calculated by standardising values for each age and gender group within each breakdown and level. For some breakdowns, there may be some age-gender groups that don't have any respondents. If several groups have no respondents, the standardised figures will not be robust. For this reason, indicator values are suppressed when three or more age-gender groups within a breakdown and level have denominator values of zero.

An example of this with mock data for local authority X is given below. These figures would not be presented in the final data files; they are aggregated up by breakdown category in the final files.

Financial year	Local authority	Age band	Gender	Numerator	Denominator	Standard population
2013/14	X	18 to 24	Female	0.0	0.0	20,000
2013/14	X	25 to 34	Female	2.5	5.0	30,000
2013/14	X	35 to 44	Female	12.8	35.6	25,000
2013/14	X	45 to 54	Female	15.7	38.5	40,000
2013/14	X	55 to 64	Female	14.7	40.1	45,000
2013/14	X	65 to 74	Female	8.5	20.2	35,000
2013/14	X	75 to 84	Female	2.3	8.9	25,000
2013/14	X	85 or over	Female	0.0	0.0	10,000
2013/14	X	18 to 24	Male	0.0	0.0	20,000
2013/14	X	25 to 34	Male	0.0	0.0	30,000
2013/14	X	35 to 44	Male	15.6	34.7	25,000
2013/14	X	45 to 54	Male	20.1	45.9	40,000
2013/14	X	55 to 64	Male	8.7	16.3	45,000
2013/14	X	65 to 74	Male	4.0	8.7	35,000
2013/14	X	75 to 84	Male	0.0	0.0	25,000
2013/14	X	85 or over	Male	0.0	0.0	10,000

As there are more than two zero counts in the denominator column within local authority X, the indicator value for 2013/14 for this local authority needs to be suppressed.

Prior to the November 2014 publication, indicator values were suppressed where one or more age and gender group had a zero count.

- Where small numbers are used in the direct standardisation calculation, the values produced will not be robust. Small numbers are determined by looking at the values of the numerators at each breakdown and level once all the age-gender groups have been aggregated up - these are the numerators that are presented in the indicator data files. Where the numerator is less than 25 for any breakdown and level, the indicator values are suppressed.
- Where any breakdown and level in the data files is generated from less than 10 respondents (unweighted count), the indicator values, numerators and denominators are suppressed to minimise the risk of disclosing responses from specific individuals. The unweighted number of respondents is not presented in the data files.
- When the above rule is applied to geographic breakdowns, secondary suppression is applied to prevent calculation of suppressed numerators and denominators.

Excel and CSV output

Column name	Output
Year	Respective financial year
Period of coverage	January to March for the respective financial year (July to March for years prior to 2016/17)
Breakdown	England, gender, age, ethnicity, sexual orientation, religion, deprivation decile, lower tier local authority, upper tier local authority, region, number of long-term conditions
Level	Level of breakdown
Level description	Description of level of breakdown
Indicator value	Directly standardised mean health status score for individuals who are reporting that they have a long-term condition
Numerator	Sum of weighted EQ-5D™ value
Denominator	Sum of weighted response (wt_new)
Average health status score for all GP Patient Survey respondents	Directly standardised mean health status score for all GP Patient Survey respondents
Survey response rate	Unweighted percentage of surveys returned
SII	Slope Index of Inequality
CI Lower – SII	95% lower confidence interval of SII
CI Upper - SII	95% upper confidence interval of SII
RII	Relative Index of Inequality
CI Lower – RII	95% lower confidence interval of RII
CI Upper - RII	95% upper confidence interval of RII

2.1 Proportion of people feeling supported to manage their condition

Indicator assurance

Status	Date
Methodology Review Group (MRG) recommended	July 2013, January 2014 (recommended based on direct standardisation methodology)
Indicator Governance Board (IGB) assured	April 2014

Overview

Indicator title

2.1 Proportion of people feeling supported to manage their long-term condition

Indicator family name

NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions

Improvement area – Ensuring people feel supported to manage their condition

Outcome sought

People with long-term conditions feel supported to manage their condition.

Detailed Descriptor

Plain English description

This indicator measures the degree to which people with health conditions that are expected to last for a significant period of time feel they have had sufficient support from relevant services and organisations to manage their condition. Patients are encouraged to consider all services and organisations, which support them in managing their condition, and not just health services.

Technical description

The directly standardised proportion of people with a long-term health condition who report having had enough support from local services or organisations to help manage their condition, in the last six months. Patients are asked to consider all services and organisations, not just health services. This is expressed as a percentage.

Data sources

GP Patient Survey (GPPS) from Ipsos MORI (<http://www.gp-patient.co.uk>) - Official Statistics

Published annually - from 2016/17 onwards one survey wave covers January – March, prior to this two survey waves per year covered July – September and January – March.

Data is available 3 to 4 months after the end of the financial year.

Construction

Calculation methodology

Introduction

Indicator 2.1 measures the percentage of people with long-term conditions who feel supported to manage their condition. The indicator is based on a very large survey of adults registered with a GP Practice in England. The GP Patient Survey is commissioned by NHS England and is conducted by the independent survey organisation Ipsos MORI. Current and previous years' survey questionnaires are available from the link in the data sources section.

Patients are eligible for the survey if they have a valid NHS number, they have been registered with a GP in England continuously for six months or longer and they are at least 18 years old six months before the questionnaire is received. Additionally, to reduce survey fatigue, patients are not to receive more than one GP Patient Survey in any 12-month period. Details regarding eligibility, participation and sampling for each survey are available in a technical annex from the link in the data sources section.

Data filters

Data are filtered based on questions from the GP Patient Survey, to isolate those who report one or more long-term conditions. Respondents are identified as having a long-term condition if they answer 'Yes' to the following question:

Do you have a long-standing health condition?

- Yes
- No
- Don't know/can't say

If respondents fail to acknowledge their long-term condition in this question (those who answer 'No' or 'Don't know/can't say') but tick a condition in the next question, they are also classed as having a long-standing health condition:

Which, if any, of the following medical conditions do you have? Please x all the boxes that apply to you

- Alzheimer's disease or dementia
- Angina or long-term heart problem
- Arthritis or long-term joint problem
- Asthma or long-term chest problem
- Blindness or severe visual impairment

- Cancer in the last 5 years
- Deafness or severe hearing impairment
- Diabetes
- Epilepsy
- High blood pressure
- Kidney or liver disease
- Long-term back problem
- Long-term mental health problem
- Long-term neurological problem
- Another long-term condition
- None of these conditions
- I would prefer not to say

Note: Learning difficulty used to be presented as an option in the above list but was removed from the 2015/16 GPPS onwards as it is generally not considered a long-term condition

All invalid responses (where there is no value for gender or age or any other of the breakdown variables) are excluded from the calculation.

Further only people resident in an English region are included in the indicator (only includes records where GOR_Name <> Wales).

Calculation

Numerator

The numerator is based on answers to the following question from the GP Patient Survey:

In the last 6 months, have you had enough support from local services or organisations to help you to manage your long-term health condition(s)? Please think about all services and organisations, not just health services.

The possible responses to the question are:

- Yes, definitely
- Yes, to some extent
- No
- I have not needed such support
- Don't know/can't say

Respondents who answer 'Yes, to some extent' are deemed to feel half as supported as respondents who answer 'Yes, definitely'. Therefore, this group of responses is weighted by 0.5 when calculating the numerator.

Given the data filter above, the numerator is therefore calculated as:

$$\sum_i (wt_new_i \times 1) + \sum_j (wt_new_j \times 0.5)$$

where $i = 1, \dots, m$ are respondents with a long-term condition who answer 'Yes, definitely'; and $j = 1, \dots, n$ are respondents with a long-term condition who answer 'Yes, to some extent'.

Denominator

The denominator is the weighted count of respondents who answer 'Yes, definitely' OR 'Yes, to some extent' OR 'No' to the question in the numerator section:

$$\sum_k (wt_new_k \times 1)$$

where $k = 1, \dots, p$ are respondents with a long-term condition who answer 'Yes, definitely' OR 'Yes, to some extent' OR 'No'.

Weighting

A weight is applied to construct the indicator. The GP Patient Survey includes a weight for non-response bias (wt_new). This adjusts the data to account for potential differences between the demographic profile of all eligible patients in a practice and the patients who actually complete the questionnaire. The non-response weighting scheme has been developed by Ipsos MORI, incorporating elements such as age and gender of the survey respondent as well as factors from the area where the respondent lives such as level of deprivation, ethnicity profile, ACORN classification and so on, which have been shown to impact on non-response bias within the GP Patient Survey. Ipsos MORI are also investigating whether respondents have systematically different outcomes to non-respondents, even after the non-response bias weighting has been applied.

Further information on the current weighting scheme can be found in the survey's technical annex from the link in the data sources section.

The following document contains important information about the weighting methodology change in 2011-12:

<https://gp-patient.co.uk/weighted-data>

Standardisation

The indicator values are directly standardised. The directly age- and gender-standardised value is the value a standard population would have if that population were to experience the age- and gender specific values of the subject population.

The directly standardised percentage (DSP) is given by:

$$DSP = \frac{1}{\sum_i w_i} \times \sum_i \frac{w_i O_i}{n_i} * 100$$

where:

O_i is the observed number of events in the local or subject population in age and gender group i

n_i is the number of individuals in the local or subject denominator population in age and gender group i

w_i is the number of individuals in the reference or standard population in age and gender group i

The standard population used for the direct method are all persons who responded to the GP Patient Survey in the respective financial year. The age groups used in the calculation are derived from question 52 of the survey (2014/15): 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 to 84, 85+.

Contextual Information

The survey response rate is measured as the unweighted number of total survey respondents as a percentage of the number of questionnaires sent. This is available at national level and for breakdowns by age, gender, lower and upper tier local authority as well as region. Survey response rates cannot be calculated for breakdowns by ethnicity, sexual orientation, religion, deprivation and number of long-term conditions as the number of surveys sent out cannot be determined at these levels.

Presentation

Breakdowns

Time periods

Annual data from 2011/12

Demographic

10-year age bands from 18 - 24 to 85 and over

Gender (Males and females)

Ethnicity

Sexual orientation

Religion

Deprivation deciles (from 1 – most deprived to 10 – least deprived)

Number of long-term conditions (One to four plus)

Geographic

England

Lower tier local authority

Upper tier local authority

Region

Disclosure control

For GPPS-based domain 2 indicators there are four different types of suppression that may be applied:

- Where several numbers are missing from the direct standardisation calculation, the values produced will not be robust. The direct standardisation used for this indicator is calculated by standardising values for each age and gender group within each breakdown and level. For some breakdowns, there may be some age-gender groups that don't have any respondents. If several groups have no respondents, the standardised figures will not be robust. For this reason, indicator values are suppressed when three or more age-gender groups within a breakdown and level have denominator values of zero.

An example of this with mock data for local authority X is given below. These figures would not be presented in the final data files; they are aggregated up by breakdown category in the final files.

Financial year	Local authority	Age band	Gender	Numerator	Denominator	Standard population
2013/14	X	18 to 24	Female	0.0	0.0	20,000
2013/14	X	25 to 34	Female	2.5	5.0	30,000
2013/14	X	35 to 44	Female	12.8	35.6	25,000
2013/14	X	45 to 54	Female	15.7	38.5	40,000
2013/14	X	55 to 64	Female	14.7	40.1	45,000
2013/14	X	65 to 74	Female	8.5	20.2	35,000
2013/14	X	75 to 84	Female	2.3	8.9	25,000
2013/14	X	85 or over	Female	0.0	0.0	10,000
2013/14	X	18 to 24	Male	0.0	0.0	20,000
2013/14	X	25 to 34	Male	0.0	0.0	30,000
2013/14	X	35 to 44	Male	15.6	34.7	25,000
2013/14	X	45 to 54	Male	20.1	45.9	40,000
2013/14	X	55 to 64	Male	8.7	16.3	45,000
2013/14	X	65 to 74	Male	4.0	8.7	35,000
2013/14	X	75 to 84	Male	0.0	0.0	25,000
2013/14	X	85 or over	Male	0.0	0.0	10,000

As there are more than two zero counts in the denominator column within local authority X, the indicator value for 2013/14 for this local authority needs to be suppressed.

Prior to the November 2014 publication, indicator values were suppressed where one or more age and gender group had a zero count.

- Where small numbers are used in the direct standardisation calculation, the values produced will not be robust. Small numbers are determined by looking at the values of the numerators at each breakdown and level once all the age-gender groups have been aggregated up - these are the numerators that are presented in the indicator

data files. Where the numerator is less than 25 for any breakdown and level, the indicator values are suppressed.

- Where any breakdown and level in the data files is generated from less than 10 respondents (unweighted count), the indicator values, numerators and denominators are suppressed to minimise the risk of disclosing responses from specific individuals. The unweighted number of respondents is not presented in the data files.
- When the above rule is applied to geographic breakdowns, secondary suppression is applied to prevent calculation of suppressed numerators and denominators.

Excel and CSV output

Column name	Output
Year	Respective financial year
Period of coverage	January to March for the respective financial year (July to March for years prior to 2016/17)
Breakdown	England, gender, age, ethnicity, sexual orientation, religion, deprivation decile, lower tier local authority, upper tier local authority, region, number of long-term conditions
Level	Level of breakdown
Level description	Description of level of breakdown
Indicator value	Weighted percentage of people who feel supported to manage their long-term condition
Numerator	Sum of weighted count of respondents with a long-term condition who answer “Yes, to some extent” to Q32 multiplied by 0.5 and sum of weighted count of respondents with a long-term condition who answer “Yes, definitely” to Q32 multiplied by 1
Denominator	Sum of weighted count of responses with a long-term condition who answer “Yes, definitely” or “Yes, to some extent” or “No” to Q32
Survey response rate	Unweighted percentage of surveys returned

2.2 Employment of people with long-term conditions

Indicator assurance

Status	Date
Methodology Review Group (MRG) recommended	June 2011
Indicator Governance Board (IGB) assured	December 2011

Overview

Indicator title

2.2 Employment of people with long-term conditions

Indicator family name

NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions

Improvement area – Improving functional ability in people with long-term conditions

Outcome sought

Improved employment rates for people with long-term conditions.

Detailed Descriptor

Plain English description

The indicator measures the difference between:

- a) the percentage of people in the general working age population who are in employment, and
- b) the percentage of people of working age with a long-term condition who are in employment.

Technical description

The percentage point difference between the rate of employment in the general working age population (aged 16-64) and the rate of employment amongst those working age adults self-reporting a long-term condition. Both component employment rates are reported alongside the indicator.

Alignment with other Outcome Frameworks

Shared with Public Health Outcomes Framework Indicator 1.08i

Complementary to Adult Social Care Outcomes Framework Indicator 1E

Data sources

Labour Force Survey (LFS), published by the Office for National Statistics (ONS) - National Statistics

Data are released quarterly approximately three months after the end of the relevant quarter.

The data are used in the ONS Labour Market statistical bulletins. The bulletin, data and methodology for the latest release can be found at the below link:

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/previousReleases>

Construction

Calculation methodology

Introduction

The indicator is given by the difference between the employment rate for all people of working age in England and the employment rate for people of working age who report a long-term condition. Three figures are reported:

1. The employment rate for all people;
2. The employment rate for people with a long-term condition;
3. The gap in employment rates between those with a long-term condition and the total population (1 - 2).

The indicator value is the last of these three figures.

Please note that the definition of each LFS variable used to construct indicator 2.2 is set out in appendix 1. For clarity, LFS variable names are written in upper case throughout.

All LFS data are weighted by person-level weights. The following table shows which weighting variables have been used for which data points.

Data Points	Weighting Year	Weighting Variable
Q1 2006 - Q4 2010	2010	PWT10
Q1 2011 - Q2 2014	2011	PWT11
Q3 2014 - Q4 2015	2014	PWT14
Q1 2016 - Q4 2016	2016	PWT16
Q1 2017 - present	2017	PWT17

Data filters

Data are filtered out if the respondent's country of residence is not England (COUNTRY#1).

Calculation

Employment rate for the general working age population

Denominator

Number of people who are of working age:

- MF1664 = 1 (respondent is of working age)

Numerator

Number of people who are of working age:

- MF1664 = 1 (respondent is of working age)

AND

- INECAC05 = 1, 2, 3, or 4 (respondent is either employee (1), self-employed (2), government employment & training programmes (3), or unpaid family worker (4). This is the International Labour Organisation (ILO) definition of basic economic activity.

Employment rate for people with a long-term condition

Denominator

Number of people with a long-term condition of working age:

- LNGLST = 1 (the respondent has a health problem or disabilities that they expect will last for more than a year)

Note: LNGLIM was used prior to 2013 Q2

AND

- MF1664 = 1 (respondent is of working age)

Numerator

Number of people with a long-term condition in employment and of working age:

- LNGLST = 1 (the respondent has a health problem or disabilities that they expect will last for more than a year)

Note: LNGLIM was used prior to 2013 Q2

AND

- INECAC05=1, 2, 3, or 4 (respondent is either employee (1), self-employed (2), government employment & training programmes (3), or unpaid family worker (4). This is the ILO definition of basic economic activity.

AND

- MF1664 = 1 (respondent is of working age)

Difference between the employment rate of the general working age population and employment rate of people with a long-term condition

Employment rate of population - Employment rate of people with a long-term condition

Breakdown variables

The following LFS variables were used to disaggregate the England-level figures:

1. Breakdown Gender
Field Name **SEX**
2. Breakdown Age (banded)
Field Name **AGE**
3. Breakdown Ethnicity
Field Name ETH01 to end 2010 and then replaced by **ETH11EW**.
4. Breakdown Region (formerly Government Office Regions)
Field Name **GOVTOF**
5. Breakdown Unitary Authority / Local Area
Field Name **UALA**
6. Breakdown NS-SEC category
Field Name **NSECM10**
7. Breakdown Religion
Field Name RELIG to end 2010 and then replaced by **RELIGE**

Presentation

Breakdowns

Time periods

Quarterly data (calendar years) from 2006 onwards.

Demographic

Gender:	Male and female from 2006
Age:	16 to 19 then 5-year age band from 20 to 24 to 60 to 64 from 2006
Ethnicity:	Ethnicity breakdown from 2006
NS-SEC category:	NS-SEC category breakdown from 2006
Religion:	Religion breakdown from 2006

Geographic

England:	England level from 2006
Region:	Region level breakdown from 2006
Unitary authority / local area:	Unitary authority / local area level breakdown from 2006

Disclosure control

Statistical disclosure control is applied to the LFS data where small sample sizes are an issue by the data provider (ONS) before the data are received. Any estimates based on a sample size of 1 or 2 are suppressed and secondary suppression is carried out where only one value is suppressed within a group or if only one unitary authority / local area is suppressed within a region.

Excel and CSV output

Column name	Output
Year	Year of coverage
Quarter	Quarter of coverage
Period of coverage	Period of coverage
Person level weight used	Year of person level weights used to calculate employment rates
Breakdown	England, gender, age, ethnicity, region, unitary authority / local area, NS-SEC category, religion
Level	A further description of breakdown
Employment rate of people with long-term condition	See definition in calculation
Employment rate of population	See definition in calculation
Indicator value	The difference in employment rate between England population and people with a long-term condition
Long-term condition numerator	Number of people with long-term conditions in employment
Long-term condition denominator	Total number of people with long-term conditions
Population numerator	Total number of people in employment
Population denominator	Total number of people in the group

2.3.i Unplanned hospitalisation for chronic ambulatory care sensitive conditions

Indicator assurance

Status	Date
Methodology Review Group (MRG) recommended	February 2013
Indicator Governance Board (IGB) assured	Not yet assured

Overview

Indicator title

2.3.i Unplanned hospitalisation for chronic ambulatory care sensitive conditions

Indicator family name

NHS Outcomes Framework - Domain 2: Enhancing quality of life for people with long-term conditions

Improvement area – Reducing time spent in hospital by people with long-term conditions

Outcome sought

Improved health status for people with chronic ambulatory care sensitive conditions.

Detailed Descriptor

Plain English description

Indicator 2.3.i measures the number of times people with specific long-term conditions, which should not normally require hospitalisation, are admitted to hospital in an emergency. These conditions include, for example, diabetes, convulsions and epilepsy, and high blood pressure.

Technical description

The indirectly standardised rate, per 100,000 population, of emergency admissions for chronic ambulatory care sensitive conditions in the respective financial year or quarter of the financial year for people of all ages.

Data sources

Denominator

Mid-year population estimates for England published by the Office for National Statistics (ONS) annually – National Statistics. Available in June following end of reporting year.

Numerator

Hospital Episode Statistics (HES) Admitted Patient Care (APC), provided by NHS Digital – National Statistics

Final annual and quarterly HES data are usually released in the November following the financial year-end.

Construction

Calculation methodology

Introduction

This indicator measures the rate of emergency hospital admissions per 100,000 population for patients with long-term ambulatory care sensitive conditions. The numerator is given by the number of finished and unfinished admission episodes, excluding transfers, for patients of all ages with an emergency method of admission and with a primary diagnosis of an ACS condition as detailed below. A data period of three months is used to produce each of the quarterly outputs. The rate is indirectly age and gender standardised to the reference year 2012/13.

Data filters

See appendix 2 for descriptions of the conditions included in indicator 2.3.i.

The data fields and filters that are used are as follows. Details of HES fields and classifications are available in the HES Data Dictionary (see <https://digital.nhs.uk/data-services/hospital-episode-statistics/data-dictionary>).

1. Field Name: DIAG_3_01, DIAG_4_01, DIAG_3_CONCAT

Conditions: Any of (a) to (i) are true. Defined as follows:

- a) DIAG_4_01 is equal to either: B180, B181
AND
DIAG_3_CONCAT does not contain: D57
[where DIAG_3_CONCAT is a concatenated field containing the values of all 20 diagnosis fields separated by commas. This condition excludes episodes with a subsequent diagnosis of D57 (Sickle-cell disorders)].
- b) DIAG_3_01 is equal to J45
OR
DIAG_4_01 is equal to J46X.
- c) (DIAG_4_01 is equal to any of: I110, J81X, I130
OR
DIAG_3_01 is equal to I50)
AND

(OPERTN_3_CONCAT does not contain any of (K0, K1, K2, K3, K4, K50, K52, K55, K56, K57, K60, K61, K66, K67, K68, K69, K71)

OR OPERTN_3_CONCAT is missing)

[where OPERTN_3_CONCAT is a concatenated field containing the values of all 24 operation/procedure fields, separated by commas]

- d) DIAG_3_01 is equal to any of: E10, E11, E12, E13, E14.

- e) DIAG_3_01 is equal to any of: J41, J43, J44
OR
 DIAG_4_01 is equal to either of: J42X, J47X
OR
 (DIAG_3_01 is equal to J20 **AND** DIAG_3_CONCAT contains (J41, J42, J43, J44, J47)

- f) DIAG_3_01 is equal to either of: I20, I25
AND
 (OPERTN_3_CONCAT does not contain any of (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, V, W, X0, X1, X2, X4, X5)
OR OPERTN_3_CONCAT is missing)

- g) DIAG_3_01 is equal to either of: D51, D52
OR
 DIAG_4_01 is equal to any of: D501, D508, D509.

- h) DIAG_4_01 is equal to either of: I10X, I119
AND
 (OPERTN_3_CONCAT does not contain any of (K0, K1, K2, K3, K4, K50, K52, K55, K56, K57, K60, K61, K66, K67, K68, K69, K71)
OR OPERTN_3_CONCAT is missing)

- i) DIAG_3_01 is equal to any of: G40, G41, I48, F00, F01, F02, F03

Rationale: These fields give the primary diagnosis of the patient in the episode of interest.

2. Field Name: **STARTAGE**

Conditions: Is between (inclusive): 0 and 120

OR

Is between (inclusive): 7001 and 7007 (for babies)

Rationale: This field describes the age of the patient at the start of their episode of care. For this indicator all ages are considered.

3. Field Name: ADMIMETH

Conditions: Is equal to any of: 21, 22, 23, 24, 25, 28, 2A, 2B, 2C or 2D
(25, 2A, 2B, 2C and 2D are valid from April 2013 and replace 28)

Rationale: This restricts the data to emergency admissions only.

4. Field Name: EPISTAT

Conditions: Is equal to either of: 1 or 3

Rationale: This includes both finished and unfinished hospital episodes.

5. Field Name: ADMIDATE

Conditions: Limited to admissions within the current financial year split by quarter.

Quarter 1: 1st April to 30th June;

Quarter 2: 1st July to 30th September;

Quarter 3: 1st October to 31st December;

Quarter 4: 1st January to 31st March.

Rationale: Data are presented quarterly with an admission date within the quarter of interest.

6. Field Name: SEX

Conditions: Is equal to either of: 1 or 2

Rationale: Data are shown for males and females separately. Data for persons represent the sum of males and females and exclude the small number of records where sex was unknown or unspecified.

7. Field Name: EPIORDER

Conditions: Is equal to: 1

Rationale: This restricts the data to the first episode in a hospital spell.

8. Field Name: ADMISORC

Conditions: Is not equal to any of: 51, 52, 53

Rationale: This excludes transfers.

9. Field Name: EPITYPE

Conditions: Is equal to: 1

Rationale: This restricts the data to general episodes (excludes birth, delivery and mental health episodes).

10. Field Name: CLASSPAT

Conditions: Is equal to: 1

Rationale: This restricts the data to ordinary admissions (excludes day case, regular day/night attenders and mothers/babies using only delivery facilities).

11. Field Name: RESLADST (2003/04 to 2010/11)

RESLADST_ONS (2011/12 onwards)

Conditions: Is equal to a valid English local authority or equal to 'U'

Rationale: This restricts the data to patients resident in England. 'U' represents 'England unspecified'.

Calculation

Denominator

ONS mid-year population estimates (based on the 2011 Census)

Numerator

The number of finished and unfinished admission episodes, excluding transfers, for patients with an emergency method of admission and with a primary diagnosis of a chronic ambulatory care sensitive condition as shown in appendix 2.

Standardised admission ratios (SARs)

Counts by category firstly need to be broken down into age and gender groups. The age groups used are 0-4, 5-9, 10-14, 15-18, 19-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75-79, 80-84, 85-89 and 90+.

The SARs can then be calculated by dividing the sum of the observed number of admissions by the sum of the expected number of admissions for each category and converted into a ratio by multiplying it by 100:

$$SAR = \frac{O}{E} \times 100 = \frac{\sum_i O_i}{\sum_i E_i} \times 100 = \frac{\sum_i O_i}{\sum_i n_i \lambda_i} \times 100$$

where:

- **O_i** is the observed number of events in the subject population in age and gender group i (i.e. the number of admissions for that group in a given year or quarter)
- **E_i** is the expected number of events in the subject population in age and gender group i, that is, the expected number of events in that age and gender group if the population in that year/quarter had the same distribution as the reference population. It is calculated by multiplying the population of that group (**n_i**) by the crude age and gender-specific rate in the reference population (**λ_i**). This figure is then multiplied by 100 (for presentational purposes)

- n_i is the number of individuals in the subject population in age- and gender group i (i.e. the number of individuals in that group in a given year or quarter)
- λ_i is the crude age- and gender specific rate in the standard population in age- and gender group i (i.e. the crude age- and gender specific rate for that age- and gender group in 2012, which is the reference year)

Indicator value

The indicator value is the indirectly standardised rate (ISR) of admissions per 100,000 population. It is standardised by age and gender to the reference year. The ISR is calculated using the crude rate of admissions for England for the reference year, multiplied by the SAR for the category, and multiplied by 1,000 to get a rate per 100,000 population. (Note that the SAR is expressed as a ratio, therefore the raw rate has already been multiplied by 100).

SAR Confidence Intervals

When calculating 95% confidence intervals for indirectly standardised ratios, it is assumed that the standard rates come from a population sufficiently large as to assume their sampling variance is negligible, and that the observed number of events O follows a Poisson distribution. Where the number of observed events is less than 500, the exact upper and lower limits for O are found from a look-up table and used to calculate the respective limits of the ratio. Where the number of observed events is 500 or more, confidence intervals are calculated using the method described by Goldblatt and Jones⁴. The lower and upper confidence limits for the SAR are denoted by SAR_LL and SAR_UL.

For $O < 500$:

$$SAR_{LL} = \frac{O_{LL}}{E} \times 100 \quad SAR_{UL} = \frac{O_{UL}}{E} \times 100$$

where:

O_{LL}/O_{UL} are the exact lower and upper 95% confidence limits from a standard Poisson distribution table for the total number of observed events O in the subject population.

E is the total expected number of events in the subject population.

For $O \geq 500$ and < 900 :

$$SAR_{LL} = \frac{0.96 + O - 1.96\sqrt{O + 0.11}}{E} \times 100$$

$$SAR_{UL} = \frac{1.94 + O + 1.96\sqrt{O + 0.96}}{E} \times 100$$

For $O \geq 900$:

⁴ Goldblatt P and Jones D. Methods. In *Longitudinal Study: Mortality and Social Organisation*, ed P Goldblatt. London: Her Majesty's Stationery Office, 1990.

$$SAR_{LL} = \frac{0.962 + O - 1.9602\sqrt{O}}{E} \times 100$$
$$SAR_{UL} = \frac{1.94 + O + 1.96\sqrt{O + 0.96}}{E} \times 100$$

ISR Confidence Intervals

The indirectly standardised rate upper and lower confidence intervals are calculated by multiplying the SAR upper and lower limits by the crude rate for the reference year.

Deprivation breakdown

The deprivation breakdown for this indicator has been derived using Index of Multiple Deprivation (IMD) 2015 scores based on 2011 lower super output area (LSOA) boundaries. These are published by the Department for Communities and Local Government (DCLG):

<https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>

Presentation

Breakdowns

Time periods

Quarterly and annual data from 2003/04 Q1 for all breakdowns

Demographic

Gender - male and female

Age – person (by 5-year age band)

Geographic

Lower tier local authority – person

Upper tier local authority – person

Region - person

Other

Deprivation decile - person

Condition – person

Disclosure control

This indicator is calculated using HES data, following the HES Analysis Guide on suppression of small numbers. Where the indicator is calculated from a numerator of

between one and five (inclusive), the value is suppressed and replaced with ‘*’. This is applied to the geographic breakdowns of lower and upper tier local authority in order to protect against the potential for disclosing the identity of an individual. Secondary suppression is carried out where only one rate is suppressed for a certain breakdown and time period and this value could be calculated by differencing. This is to reduce the risk of one suppressed number being identifiable in isolation. For the condition breakdown, however, no suppression is carried out as small numbers at a national level are not considered disclosive. Please see the HES Analysis Guide (p. 18) for further information:

http://content.digital.nhs.uk/media/1592/HES-analysis-guide/pdf/HES_Analysis_Guide_March_2015.pdf As ONS population data were used for the denominator the values were rounded to the nearest 100. The rounding was carried out after the indicator value was calculated.

Excel and CSV output

Column name	Output
Year	Financial year
Quarter	Annual, quarter
Period of coverage	Actual time period the data covers
Breakdown	England, gender, age band, local authority (lower and upper tier), region, deprivation decile, condition
Level	Detailed breakdown of each split – breakdown code
Level description	Further description of level/breakdown
Indicator value	Indirectly standardised rate (ISR) per 100,000 population
Lower CI	ISR lower 95% confidence interval
Upper CI	ISR upper 95% confidence interval
Standardised ratio	Standardised admission ratio
Standardised ratio lower CI	Standardised admission ratio lower confidence interval
Standardised ratio upper CI	Standardised admission ratio upper confidence interval
Observed	Number of observed events (numerator)
Population	Population count (denominator)
Expected	Number of expected events
Percent unclassified	The percentage of records where there is no LSOA or LA code recorded – displayed for lower and upper tier local authority, region and deprivation decile breakdowns

2.3.ii Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s

Indicator assurance

Status	Date
Methodology Review Group (MRG) recommended	April 2012
Indicator Governance Board (IGB) assured	Not yet assured

Overview

Indicator title

2.3.ii Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s

Indicator family name

NHS Outcomes Framework - Domain 2: Enhancing quality of life for people with long-term conditions

Improvement area – Reducing time spent in hospital by people with long-term conditions

Outcome sought

Improving the health status of those aged 0 to 18 who have asthma, diabetes or epilepsy.

Detailed Descriptor

Plain English description

This indicator measures how many times young people (aged 0 to 18 inclusive) who have asthma, diabetes or epilepsy are admitted to hospital in an emergency.

Technical description

The indirectly standardised rate, per 100,000 population, of emergency hospital admissions for young people with a primary diagnosis of asthma, diabetes or epilepsy in the respective financial year or quarter of the financial year.

Data sources

Denominator

Mid-year population estimates for England published by the Office for National Statistics (ONS) annually – National Statistics. Available June following end of reporting year.

Numerator

Hospital Episode Statistics (HES) Admitted Patient Care (APC), provided by NHS Digital – National Statistics

Final annual and quarterly HES data are usually released in the November following the financial year-end.

Construction

Calculation methodology

Introduction

This indicator measures the rate of emergency hospital admissions per 100,000 population for patients with asthma, diabetes and epilepsy. The numerator is given by the number of finished and unfinished admission episodes, excluding transfers, for patients under 19 years old with an emergency method of admission and with a primary diagnosis of asthma, diabetes or epilepsy as shown below. A data period of three months is used to produce each of the quarterly outputs. The rate is indirectly age and gender standardised to the reference year 2012/13.

Data filters

See appendix 3 for descriptions of the conditions included in indicator 2.3.ii.

The data fields and filters that are used are as follows. Details of HES fields and classifications are available in the HES Data Dictionary (see <https://digital.nhs.uk/data-services/hospital-episode-statistics/data-dictionary>).

1. Field Name: **DIAG_3_01**

Conditions: Is equal to any of: J45, J46, E10, G40, G41

Rationale: This gives the primary diagnosis of the patient.

2. Field Name: **STARTAGE**

Conditions: Is between (inclusive): 0 and 18
OR

Is between (inclusive): 7001 and 7007 (for babies)

Rationale: This field describes the age of the patient at the start of their episode of care. For this indicator only patients under the age of 19 are considered.

3. Field Name: **ADMIMETH**

Conditions: Is equal to any of: 21, 22, 23, 24, 25, 28, 2A, 2B, 2C or 2D
(25, 2A, 2B, 2C and 2D are valid from April 2013 and replace 28)

Rationale: This restricts the data to emergency admissions only.

4. Field Name: EPISTAT

Conditions: Is equal to either of: 1 or 3

Rationale: This includes both finished and unfinished hospital episodes.

5. Field Name: ADMIDATE

Conditions: Limited to admissions within the current financial year split by quarter.

Quarter 1: 1st April to 30th June;

Quarter 2: 1st July to 30th September;

Quarter 3: 1st October to 31st December;

Quarter 4: 1st January to 31st March.

Rationale: Data are presented quarterly with an admission date within the quarter of interest.

6. Field Name: SEX

Conditions: Is equal to either of: 1 or 2

Rationale: Data are shown for males and females separately. Data for persons are the sum of males and females and exclude the small number of records where sex was unknown or unspecified.

7. Field Name: EPIORDER

Conditions: Is equal to: 1

Rationale: This restricts the data to the first episode in a hospital spell.

8. Field Name: ADMISORC

Conditions: Is not equal to any of: 51, 52, 53

Rationale: This excludes transfers

9. Field Name: EPITYPE

Conditions: Is equal to: 1

Rationale: This restricts the data to general episodes (excludes birth, delivery and mental health episodes).

10. Field Name: CLASSPAT

Conditions: Is equal to: 1

Rationale: This restricts the data to ordinary admissions (excludes day case, regular day/night attenders and mothers/babies using only delivery facilities).

11. Field Name: RESLADST (2003/04 to 2010/11)

RESLADST_ONS (2011/12 onwards)

Conditions: Is equal to a valid English local authority or equal to 'U'

Rationale: This restricts the data to patients resident in England. 'U' represents 'England unspecified'.

Calculation

Denominator

Resident population in England aged 0 to 18 inclusive, based on ONS mid-year population estimates (based on the 2011 Census).

Numerator

The number of finished and unfinished admission episodes, excluding transfers, for patients aged under 19 with an emergency method of admission and where asthma, diabetes or epilepsy was the primary diagnosis.

Standardised admission ratios (SARs)

Counts by category firstly need to be broken down into age and gender groups. The age groups used for this indicator are single years of age 0 to 18.

The SARs can then be calculated by dividing the sum of the observed number of admissions by the sum of the expected number of admissions for each category and converted into a ratio by multiplying it by 100:

$$SAR = \frac{O}{E} \times 100 = \frac{\sum_i O_i}{\sum_i E_i} \times 100 = \frac{\sum_i O_i}{\sum_i n_i \lambda_i} \times 100$$

where:

- **O_i** is the observed number of events in the subject population in age and gender group i (i.e. the number of admissions for that group in a given year or quarter)
- **E_i** is the expected number of events in the subject population in age and gender group i, that is, the expected number of events in that age and gender group if the population in that year/quarter had the same distribution as the reference population. It is calculated by multiplying the number of individuals in that group (**n_i**) by the crude age-and gender-specific rate in the reference population (**λ_i**). This figure is then multiplied by 100 (for presentational purposes)

- n_i is the number of individuals in the subject population in age- and gender group i (i.e. the number of individuals in that group in a given year or quarter)
- λ_i is the crude age- and gender specific rate in the standard population in age- and gender group i (i.e. the crude age- and gender specific rate for that age- and gender group in 2012, which is the reference year)

Indicator value

The indicator value is the indirectly standardised rate (ISR) of admissions per 100,000 population. It is standardised by age and gender to the reference year. The ISR is calculated using the crude rate of admissions for England for the reference year, multiplied by the SAR for the category, and multiplied by 1,000 to get a rate per 100,000 population. (Note that the SAR is expressed as a ratio, therefore the raw rate has already been multiplied by 100).

SAR Confidence Intervals

When calculating 95% confidence intervals for indirectly standardised ratios, it is assumed that the standard rates come from a population sufficiently large as to assume their sampling variance is negligible, and that the observed number of events O follows a Poisson distribution. Where the number of observed events is less than 500, the exact upper and lower limits for O are found from a look-up table and used to calculate the respective limits of the ratio. Where the number of observed events is 500 or more, confidence intervals are calculated using the method described by Goldblatt and Jones⁵. The lower and upper confidence limits for the SAR are denoted by SAR_LL and SAR_UL.

For $O < 500$:

$$SAR_{LL} = \frac{O_{LL}}{E} \times 100 \quad SAR_{UL} = \frac{O_{UL}}{E} \times 100$$

where:

$O_{LL/UL}$ are the exact lower and upper 95% confidence limits from a standard Poisson distribution table for the total number of observed events O in the subject population.

E is the total expected number of events in the subject population.

For $O \geq 500$ and < 900 :

$$SAR_{LL} = \frac{0.96 + O - 1.96\sqrt{(O + 0.11)}}{E} \times 100$$

$$SAR_{UL} = \frac{1.94 + O + 1.96\sqrt{(O + 0.96)}}{E} \times 100$$

For $O \geq 900$:

⁵ Goldblatt P and Jones D. Methods. In *Longitudinal Study: Mortality and Social Organisation*, ed P Goldblatt. London: Her Majesty's Stationery Office, 1990.

$$SAR_{LL} = \frac{0.962 + O - 1.9602\sqrt{O}}{E} \times 100$$
$$SAR_{UL} = \frac{1.94 + O + 1.96\sqrt{O + 0.96}}{E} \times 100$$

ISR Confidence Intervals

The indirectly standardised rate upper and lower confidence intervals are calculated by multiplying the SAR upper and lower limits by the crude rate for the reference year.

Deprivation breakdown

The deprivation breakdown for this indicator has been derived using Index of Multiple Deprivation (IMD) 2015 scores based on 2011 lower super output area (LSOA) boundaries. These are published by the Department for Communities and Local Government (DCLG):

<https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>

Presentation

Breakdowns

Time periods

Quarterly and annual data from 2003/04 Q1 for all breakdowns

Demographic

Gender - male and female

Age – person (by single year of age)

Geographic

Lower tier local authority – person

Upper tier local authority – person

Region - person

Other

Deprivation decile - person

Condition – person

Disclosure control

This indicator is calculated using HES data, following the HES Analysis Guide on suppression of small numbers. Where the indicator is calculated from a numerator of between one and five (inclusive), the value is suppressed and replaced with '*'. This is applied to the geographic breakdowns of lower and upper tier local authority in order to protect against the potential for disclosing the identity of an individual. Secondary suppression is carried out where only one rate is suppressed for a certain breakdown and time period and this value could be calculated by differencing. This is to reduce the risk of one suppressed number being identifiable in isolation. For the condition breakdown, however, no suppression is carried out as small numbers at a national level are not considered disclosive. Please see the HES Analysis Guide (p. 18) for further information:

http://content.digital.nhs.uk/media/1592/HES-analysis-guide/pdf/HES_Analysis_Guide_March_2015.pdf As ONS population data were used for the denominator, the values were rounded to the nearest 100. The rounding was carried out after the indicator value was calculated.

Excel and CSV output

Column name	Output
Year	Financial year
Quarter	Annual, quarter
Period of coverage	Actual time period the data covers
Breakdown	England, gender, age band, local authority (lower and upper tier), region, deprivation decile, condition
Level	Detailed breakdown of each split – breakdown code
Level description	Further description of level/breakdown
Indicator value	Indirectly standardised rate (ISR) per 100,000 population
Lower CI	ISR lower 95% confidence interval
Upper CI	ISR upper 95% confidence interval
Standardised ratio	Standardised admission ratio
Standardised ratio lower CI	Standardised admission ratio lower confidence interval
Standardised ratio upper CI	Standardised admission ratio upper confidence interval
Observed	Number of observed events (numerator)
Population	Population count (denominator)
Expected	Number of expected events
Percent unclassified	The percentage of records where there is no LSOA or LA code recorded – displayed for lower and upper tier local authority, region and deprivation decile breakdowns

2.4 Health-related quality of life for carers

Indicator assurance

Status	Date
Methodology Review Group (MRG) recommended	July 2013, January 2014 (recommended based on direct standardisation methodology)
Indicator Governance Board (IGB) assured	November 2014

Overview

Indicator title

2.4 Health-related quality of life for carers

Indicator family name

NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions

Improvement area – Enhancing quality of life for carers

Outcome sought

Improved health-related quality of life for carers.

Detailed Descriptor

Plain English description

This indicator measures health-related quality of life for people who identify themselves as helping or supporting family members, friends, neighbours or others with their long-term physical or mental ill health/disability or because of problems related to old age. By health-related quality of life, we mean the extent to which people:

- have problems walking about;
- have problems performing self-care activities (washing or dressing themselves);
- have problems performing their usual activities (work, study etc.);
- have pain or discomfort; and
- feel anxious or depressed.

Technical description

The directly standardised average (mean) EQ-5D™ score for individuals reporting that they are carers, measured based on responses to the GP Patient Survey.

Alignment with other Outcomes Frameworks

Complementary to Adult Social Care Outcomes Framework Indicator 1D

Data sources

GP Patient Survey (GPPS) from Ipsos MORI (<http://www.gp-patient.co.uk>) – Official Statistics

Published annually - from 2016/17 onwards one survey wave covers January – March, prior to this two survey waves per year covered July – September and January – March.

As of February 2018, further updates for this indicator are currently to be confirmed.

Construction

Calculation methodology

Introduction

Indicator 2.4 measures health-related quality of life for people reporting that they are carers. The indicator is based on a very large survey of adults registered with a GP Practice in England. The GP Patient Survey is commissioned by NHS England and is conducted by the independent survey organisation Ipsos MORI. Current and previous years' survey questionnaires are available from the link in the data sources section.

Patients are eligible for the survey if they have a valid NHS number, they have been registered with a GP in England continuously for six months or longer before the questionnaire is received. Additionally, to reduce survey fatigue, patients are not to receive more than one GP Patient Survey in any 12-month period. Details regarding eligibility, participation and sampling for the survey are available in a technical annex from the link in the data sources section.

Data filters

Data are filtered based on the following question from the GP Patient Survey, to isolate those who identify themselves as a carer:

Do you look after, or give any help or support to family members, friends, neighbours or others because of either:

-long-term physical or mental health/disability, or

-problems related to old age?

Do not count anything you do as part of your paid employment

The possible responses are:

- No
- Yes, 1-9 hours a week
- Yes, 10-19 hours a week
- Yes, 20-34 hours a week
- Yes, 35-49 hours a week

- Yes, 50+ hours a week

People who answer 'Yes ...' are assumed a carer, regardless of how many hours of care they provide. Those who answer otherwise are not considered in the calculation.

All invalid responses (where there is no value for gender or age or any other of the breakdown variables) are excluded from the calculation.

Further only people resident in an English region are included in the indicator (only includes records where GOR_Name <> Wales).

Calculation

Denominator

The denominator is the weighted count of responses from people who identify themselves as carers.

$$\sum_k (wt_new_k)$$

where $k = 1, \dots, p$ are respondents who identify themselves as carers in the GP Patient Survey.

Numerator

Health-related quality of life for people who identify themselves as carers is measured using the EQ-5D™ instrument which asks respondents to rate their health in five different areas. The ratings are collected through the following question in the survey :

By placing an (x) in one box in each group below, please indicate which statements best describe your own health state today.

The possible responses are:

Mobility

- I have no problems in walking about
- I have slight problems in walking about
- I have moderate problems in walking about
- I have severe problems in walking about
- I am unable to walk about

Self-Care

- I have no problems washing or dressing myself
- I have slight problems washing or dressing myself
- I have moderate problems washing or dressing myself
- I have severe problems washing or dressing myself

- I am unable to wash or dress myself

Usual Activities (e.g. work, study, housework, family or leisure activities)

- I have no problems doing my usual activities
- I have slight problems doing my usual activities
- I have moderate problems doing my usual activities
- I have severe problems doing my usual activities
- I am unable to do my usual activities

Pain / Discomfort

- I have no pain or discomfort
- I have slight pain or discomfort
- I have moderate pain or discomfort
- I have severe pain or discomfort
- I have extreme pain or discomfort

Anxiety / Depression

- I am not anxious or depressed
- I am slightly anxious or depressed
- I am moderately anxious or depressed
- I am severely anxious or depressed
- I am extremely anxious or depressed

The answers to these questions are converted into an index by applying a formula that attaches values (also called weights) to each of the levels in each dimension. The weights are based on an empirical study, which asked people to quantify the extent to which they would sacrifice quantity of life in order to gain improvements in quality of life, at various states of health (see Dolan et al⁶ and Szende, Oppe and Devlin⁷ for details).

Individual EQ-5D™ index scores range between -0.594 and 1.000. The highest value is assigned to patients who report the best possible health state for each of the five domains.

The numerator is the sum of the weighted EQ-5D™ index values for all responses from people who identify themselves as carers.

⁶ Dolan P et al. 1995. A social tariff for EuroQol: Results from a UK general population survey. Discussion Paper No. 138. Centre for Health Economics, University of York, York.

⁷ Szende, A., Oppe, M., and Devlin, N. 2006. EQ-5D™ value sets: Inventory, comparative review and user guide. Eds. EuroQol Group Monographs Volume 2. Springer, 2006.

This is calculated as: $\sum_i (EQ - 5D^{TM} \times wt_new_i)$

where $i = 1, \dots, m$ are respondents who identify themselves as carers.

2011/12 data are based on the EQ-5D-3LTM instrument, which provided respondents with three possible answers under each of the five domains. From 2012/13 onwards, the EQ-5D-3LTM was replaced with the EQ-5D-5LTM instrument which provides respondents with five possible answers under each domain as shown on the previous page.

Whilst preference weights for the new instrument are under development, a crosswalk to translate 3L index values into 5L index values has been devised. Details of the crosswalk methodology and results can be found on the EuroQol website:

<https://euroqol.org/wp-content/uploads/2017/03/PIIS1098301512000587.pdf>

https://euroqol.org/wp-content/uploads/2017/02/EQ-5D-5L_Crosswalk_model_and_methodology.pdf

EQ-5DTM is a registered trademark of EuroQol. Further details are available from <http://www.euroqol.org>.

EuroQol Group gave written permission to the Department of Health on 2 May 2011 to use the EQ-5DTM questions only in this format (without the visual analogue scale) for the GP Patient Survey and are happy for it to be referred to as EQ-5DTM.

Weighting

A weight is applied to construct the indicator. The GP Patient Survey includes a weight for non-response bias (wt_new). This adjusts the data to account for potential differences between the demographic profile of all eligible patients in a practice and the patients who actually complete the questionnaire. The non-response weighting scheme has been developed by Ipsos MORI, incorporating elements such as age and gender of the survey respondent as well as factors from the area where the respondent lives such as level of deprivation, ethnicity profile, ACORN classification and so on, which have been shown to impact on non-response bias within the GP Patient Survey. Ipsos MORI are also investigating whether respondents have systematically different outcomes to non-respondents, even after the non-response bias weighting has been applied.

Further information on the current weighting scheme can be found in the survey's technical annex which is available from the link in the data sources section.

The following document contains important information about the weighting methodology change in 2011-12:

<https://gp-patient.co.uk/weighted-data>

Standardisation

The indicator values are directly standardised. The directly age- and gender-standardised mean EQ-5DTM score is the score a standard population would have if that population were to experience the age- and gender specific scores of the subject population.

The directly standardised score (DSS) is given by:

$$DSS = \frac{1}{\sum_i w_i} \times \sum_i \frac{w_i O_i}{n_i}$$

where:

O_i is the observed number of events in the local or subject population in age and gender group i (Sum of weighted EQ-5DTM scores in the respective age and gender group for all respondents who identify themselves as carers)

n_i is the number of individuals in the local or subject denominator population in age and gender group i (Sum of all weighted responses (wt_new) in the respective age and gender group for all respondents who identify themselves as carers)

w_i is the number of individuals in the reference or standard population in age and gender group i (Sum of all weighted responses (wt_new) in the respective age and gender group for all respondents to the GP patient survey)

The standard population used for the direct method are all persons who responded to the GP Patient survey in the respective financial year. The age groups used in the calculation are: 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 to 84, 85+.

Contextual Information

A contextual indicator showing the average health status score for all GP Patient Survey respondents at national level and for each of the breakdowns is calculated. This information aims to aid the interpretation by providing comparison of the health-related quality of life for people who identify themselves as carers to the whole GP Patient Survey population.

The survey response rate is measured as the unweighted number of total survey respondents as a percentage of the number of questionnaires sent. This is available at national level and for breakdowns by age, gender, lower and upper tier local authority as well as region. Survey response rates cannot be calculated for breakdowns by ethnicity, sexual orientation, religion, deprivation and number of long-term conditions as the number of surveys sent out cannot be determined at these levels.

Additionally the distribution of carers by age and gender and the number of hours cared are shown for each of the survey periods where data are available.

Presentation

Breakdowns

Time periods

Annual data from 2011/12

Demographic

Age bands (18 to 24 then 10-year bands from 25 to 85+)

Gender (Male, female)

Ethnicity

Sexual orientation

Religion

Deprivation deciles (from 1 – most deprived to 10 – least deprived)

Geographic

England

Lower tier local authority

Upper tier local authority

Region

Disclosure control

For GPPS-based domain 2 indicators there are four different types of suppression that may be applied:

- Where several numbers are missing from the direct standardisation calculation, the values produced will not be robust. The direct standardisation used for this indicator is calculated by standardising values for each age and gender group within each breakdown and level. For some breakdowns, there may be some age-gender groups that don't have any respondents. If several groups have no respondents, the standardised figures will not be robust. For this reason, indicator values are suppressed when three or more age-gender groups within a breakdown and level have denominator values of zero.

An example of this with mock data for local authority X is given below. These figures would not be presented in the final data files; they are aggregated up by breakdown category in the final files.

Financial year	Local authority	Age band	Gender	Numerator	Denominator	Standard population
2013/14	X	18 to 24	Female	0.0	0.0	20,000
2013/14	X	25 to 34	Female	2.5	5.0	30,000
2013/14	X	35 to 44	Female	12.8	35.6	25,000
2013/14	X	45 to 54	Female	15.7	38.5	40,000
2013/14	X	55 to 64	Female	14.7	40.1	45,000
2013/14	X	65 to 74	Female	8.5	20.2	35,000
2013/14	X	75 to 84	Female	2.3	8.9	25,000
2013/14	X	85 or over	Female	0.0	0.0	10,000
2013/14	X	18 to 24	Male	0.0	0.0	20,000
2013/14	X	25 to 34	Male	0.0	0.0	30,000
2013/14	X	35 to 44	Male	15.6	34.7	25,000
2013/14	X	45 to 54	Male	20.1	45.9	40,000
2013/14	X	55 to 64	Male	8.7	16.3	45,000

2013/14	X	65 to 74	Male	4.0	8.7	35,000
2013/14	X	75 to 84	Male	0.0	0.0	25,000
2013/14	X	85 or over	Male	0.0	0.0	10,000

As there are more than two zero counts in the denominator column within local authority X, the indicator value for 2013/14 for this local authority needs to be suppressed.

Prior to the November 2014 publication, indicator values were suppressed where one or more age and gender group had a zero count.

- Where small numbers are used in the direct standardisation calculation, the values produced will not be robust. Small numbers are determined by looking at the values of the numerators at each breakdown and level once all the age-gender groups have been aggregated up - these are the numerators that are presented in the indicator data files. Where the numerator is less than 25 for any breakdown and level, the indicator values are suppressed.
- Where any breakdown and level in the data files is generated from less than 10 respondents (unweighted count), the indicator values, numerators and denominators are suppressed to minimise the risk of disclosing responses from specific individuals. The unweighted number of respondents is not presented in the data files.
- When the above rule is applied to geographic breakdowns, secondary suppression is applied to prevent calculation of suppressed numerators and denominators.

Excel and CSV output

Column name	Output
Year	Respective financial year
Period of coverage	July to September of previous year and January to March of following year for the respective financial year
Breakdown	January to March for the respective financial year (July to March for years prior to 2016/17)
Level	Level of breakdown
Level description	Description of level of breakdown
Indicator value	Weighted average health status score for individuals who are reporting that they are carers
Numerator	Sum of weighted EQ-5D™ values
Denominator	Sum of weighted responses (wt_new)
Average health status	Weighted average health status score for all GP Patient Survey

score for all GP Patient Survey respondents	respondents
Survey response rate	Unweighted percentage of surveys returned

2.5.i Employment of people with mental illness (formerly indicator 2.5)

Indicator assurance

Status	Date
Methodology Review Group (MRG) recommended	June 2011
Indicator Governance Board (IGB) assured	December 2011

Overview

Indicator title

2.5.i Employment of people with mental illness

Indicator family name

NHS Outcomes Framework - Domain 2: Enhancing quality of life for people with long-term conditions

Improvement area – Enhancing quality of life for people with mental illness

Outcome sought

Improved employment rates for people with mental illness.

Detailed Descriptor

Plain English description

The indicator measures the difference between:

- a) the percentage of people in the general working age population who are in employment, and
- b) the percentage of people of working age with a mental illness who are in employment.

Technical description

The percentage point difference between the rate of employment in the general working age population (aged 16-64) and the rate of employment amongst those working age adults self-reporting a mental illness. Both component employment rates are reported alongside the indicator.

Alignment with other Outcomes Frameworks

Complementary to Adult Social Care Outcomes Framework Indicator 1F

Complementary to Public Health Outcomes Framework Indicator 1.08iii

Data sources

Labour Force Survey (LFS), published by the Office for National Statistics (ONS) - National Statistics

Data are released quarterly approximately three months after the end of the relevant quarter.

The data are used in the ONS Labour Market statistical bulletins. The bulletin, data and methodology for the latest release can be found at the below link:

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/previousReleases>

Construction

Calculation methodology

Introduction

The indicator is given by the difference between the employment rate for all people of working age in England and the employment rate for people of working age who report a mental illness. Three figures will be reported:

1. The employment rate for all people in England;
2. The employment rate for people with mental illness in England;
3. The gap in employment rates between those with mental illness and the total population (1 – 2).

Indicator 2.5.i is the last of these three figures.

Please note that the definition of each LFS variable used to construct indicator 2.5.i is set out in appendix 1. For clarity, LFS variable names are written in upper case throughout.

All LFS data are weighted by person-level weights. The following table shows which weighting variables have been used for which data points.

Data Points	Weighting Year	Weighting Variable
Q1 2006 - Q4 2010	2010	PWT10
Q1 2011 - Q2 2014	2011	PWT11
Q3 2014 - Q4 2015	2014	PWT14
Q1 2016 - Q4 2016	2016	PWT16
Q1 2017 - present	2017	PWT17

Data filters

Data are filtered out if the respondent's country of residence is not England (COUNTRY#1).

Calculation

Employment rate for the general working age population

Denominator

Number of people who are of working age. An LFS respondent is included in the denominator if:

- MF1664 = 1 (respondent is of working age)

Numerator

Number of people of working age who are in employment. An LFS respondent is included in the numerator if:

- INECAC05 = 1, 2, 3 or 4 (Respondent is either employee (1), self-employed (2), government employment & training programmes (3), or unpaid family worker (4). This is the ILO definition of basic economic activity.
AND
- MF1664 = 1 (respondent is of working age)

Employment rate for people with mental illness

Denominator

Number of people with a mental illness of working age. An LFS respondent is included in the denominator if:

- LNGLST = 1 (the respondent has a health problem or disabilities that they expect will last for more than a year)
Note: LNGLIM was used prior to 2013 Q2
AND
- HEAL = 12, 14 or 15 (the respondent has depression, bad nerves or anxiety (12), severe or specific learning difficulties (mental handicap) (14) or mental illness or suffers from phobia, panics or other nervous disorders (15))
AND
- MF1664 = 1 (respondent is of working age)

Numerator

Number of people with a mental illness in employment and of working age. An LFS respondent is included in the numerator if:

- LNGLST = 1 (the respondent has a health problem or disabilities that they expect will last for more than a year)
Note: LNGLIM was used prior to 2013.
AND

- HEAL = 12, 14 or 15 (the respondent has depression, bad nerves or anxiety (12), severe or specific learning difficulties (mental handicap) (14) or mental illness or suffer from phobia, panics or other nervous disorders (15))
AND
- INECAC05 = 1, 2, 3 or 4 (respondent is either an employee (1), self-employed (2), in government employment & training programmes (3), or an unpaid family worker (4). This is the ILO definition of basic economic activity).
AND
- MF1664 = 1 (respondent is of working age)

Difference between employment rate of the general working age population and employment rate of people with mental illness

Employment rate of population - Employment rate of people with mental illness

Breakdown variables

The following LFS variables were used to disaggregate the England-level figures:

1. Breakdown Gender
Field Name **SEX**
2. Breakdown Age (banded)
Field Name **AGE**
3. Breakdown Ethnicity
Field Name ETH01 to end 2010 and then replaced by **ETH11EW**.
4. Breakdown Region (formerly Government Office Regions)
Field Name **GOVTOF**
5. Breakdown Unitary Authority/Local Area
Field Name **UALA**
6. Breakdown NS-SEC category
Field Name **NSECM10**
7. Breakdown Religion
Field Name RELIG to end 2010 and then replaced by **RELIGE**
8. Breakdown Condition
Field Name Learning difficulty / disability: **HEAL** = 14 (Severe or specific learning difficulties (mental handicap))

Mental illness: HEAL = 12 or 15 (the respondent has depression, bad nerves or anxiety (12) or mental illness, or suffer from phobia, panics or other nervous disorders (15))

Presentation

Breakdowns

Time periods

Quarterly data from 2006 for England

Demographic

Gender:	Male and female from 2006
Age:	16 to 19 then 5-year age bands from 20 to 24 to 60 to 64 from 2006
Ethnicity:	Ethnicity breakdown from 2006
NS-SEC category:	NS-SEC category breakdown from 2006
Religion:	Religion breakdown from 2006

Geographic

England:	England level from 2006
Region:	Region level breakdown from 2006
Unitary authority/ local area:	Unitary authority/local area level breakdown from 2006

Other

Breakdown by condition (learning disability and mental illness)

Disclosure control

Statistical disclosure control is applied to the LFS data where small sample sizes are an issue by the data provider (ONS) before the data are received. Any estimates based on a sample size of 1 or 2 are suppressed and secondary suppression is carried out where only one value is suppressed within a group or if only one unitary authority/local area is suppressed within a region.

Excel and CSV output

Column name	Output
Year	Year of coverage
Quarter	Quarter of coverage
Period of coverage	Period of coverage
Person level weight used	Year of person level weights used to calculate employment rates

Breakdown	England, gender, age, ethnicity, region, unitary authority/local area, NS-SEC category, religion, condition
Level	A further description of breakdown
Employment rate of people with mental illness	See definition in calculation
Employment rate of population	See definition in calculation
Indicator value	The difference in employment rate between England population and people with a mental illness
Mental illness numerator	Number of people with a mental illness in employment and of working age
Mental illness denominator	Total number of people with a mental illness and of working age
Population numerator	Total number of people in employment and of working age
Population denominator	Total number of people who are of working age

2.6.i Estimated diagnosis rate for people with dementia

Indicator assurance

Status	Date
Methodology Review Group (MRG) recommended	August 2012
Indicator Governance Board (IGB) assured	Not yet assured

Overview

Indicator title

2.6.i Estimated diagnosis rate for people with dementia

Indicator family name

NHS Outcomes Framework – Domain 2: Enhancing quality of life for people with long-term conditions

Improvement area – Enhancing quality of life for people with dementia

Outcome sought

Enhancing quality of life for people with dementia.

Detailed Descriptor

Plain English description

Not all people who have dementia are diagnosed with the condition. This indicator measures the number of people that have been diagnosed with dementia as a percentage of the number who are estimated to have the condition.

Technical description

Estimated diagnosis rate for dementia. The estimate of the number of people with dementia is based on published research.

Alignment with other Outcomes Frameworks

Shared with Public Health Outcomes Framework Indicator 4.16

Data sources

Denominator:

1. Dementia prevalence rates

Estimated person-level prevalence rates for dementia from the age of 40 by 5-year age groups are sourced from the Dementia UK report 2007 (pages 13 and 16).

The prevalence rates are (listed below) are based on published research and are not updated regularly.

2. England population estimates

1. Annual England population estimates for the very elderly (90+) by single year of age (unrounded data) provided by the Office for National Statistics (ONS) – National Statistics. Provided as a bespoke file from ONS.

As a consequence of the methodology used to produce the mid-year populations for the very elderly previous years' estimates for the 90-94 and 95+ age groups are revised every year when the latest figures are produced. However, the sum of the very elderly estimates by single year of age for all adults aged 90+ will always match the England mid-year population figure for all adults aged 90+.

2. Annual England mid-year population estimates up to age 89 provided by ONS - National Statistics, usually released in June each year.

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/previousReleases>

Numerator:

QOF prevalence data

The number of people diagnosed with dementia is sourced from the NHS Digital Quality and Outcomes Framework (QOF) dataset - Official Statistics:

<http://content.digital.nhs.uk/qof>

QOF prevalence data are available annually.

Construction

Calculation methodology

Introduction

Not everyone with dementia has a clinical diagnosis. This indicator measures the number of people with a diagnosis of dementia as a percentage of the number estimated to have the condition.

Denominator

The denominator is based on estimated prevalence rates for dementia, published by the Alzheimer's Society in 2007, and ONS population estimates. Estimated prevalence rates are based on a Delphi consensus exercise, and are viewed as the most authoritative to date (see the Dementia UK report). The person-level prevalence rates from the age of 40 to 95+

are applied to England population figures by 5-year age-band to derive an estimate of the total number of people with dementia in England. Although prevalence rates for age groups 30-34 and 35-39 are available these are excluded from the calculation of the indicator values. This is based on the original calculation proposal as presented to the Methodology Review Group (MRG) in August 2012.

The person-level prevalence rates used are set out in the following table:

Age	Population Prevalence (%)
40-44	0.0140
45-49	0.0304
50-54	0.0583
55-59	0.1368
60-64	0.1557
65-69	1.3
70-74	2.9
75-79	5.9
80-84	12.2
85-89	20.3
90-94	28.6
95+	32.5

Recent and on-going research into dementia prevalence (for example, findings from the CFAS II study⁸) will be analysed, and where a more authoritative estimate is identified, prevalence rates will be updated in due course.

Numerator

The numerator is given by the number of people who are on their GP Practice's dementia register, as recorded in QOF. People are likely to enter the dementia register after a secondary care episode or as a result of their GP's clinical judgement. It is possible, however, that a patient has a clinical diagnosis of dementia but this has not been captured in the condition register. The following table shows the number of people diagnosed with dementia, based on QOF data:

⁸ Matthews F et al. (2013) A two-decade comparison of prevalence of dementia in individuals aged 65 years and older from three geographical areas of England: results of the Cognitive Function and Ageing Study I and II. July, Lancet.

Year	Number of people with a dementia diagnosis
2007/08	220,246
2008/09	232,430
2009/10	249,463
2010/11	266,697
2011/12	293,738
2012/13	318,669
2013/14	348,973
2014/15	419,073

Calculation

Denominator

$$\Sigma_j (\% \text{ Prevalence rate}_j * \text{Population estimate}_j)$$

Where $j = 40-44, 45-49, 50-54, \dots, 90-94, 95+$ is the age group

Numerator

$$\Sigma_i (\text{Number of entries on dementia register}_i)$$

Where $i = 1, \dots, 8245$ is the GP Practice

Presentation

Breakdowns

Time periods

Annual data from 2007/08 for England

Excel and CSV output

Column name	Output
Year	Year of coverage
Period of coverage	The exact dates of coverage
Breakdown	National level only
Level	Further description of breakdown (currently not applicable as national level only)
Indicator value	Estimated diagnosis rate (number of people diagnosed/estimated prevalence)
Notes	Where applicable

2.7 Health-related quality of life for people with three or more long-term conditions

Indicator assurance

This indicator uses the same methodology as indicator 2 (Health-related quality of life for people with long-term conditions), therefore its assurance is assessed through the indicator 2 applications.

Status	Date
Methodology Review Group (MRG) recommended	July 2013, January 2014 (recommended based on direct standardisation methodology)
Indicator Governance Board (IGB) assured	April 2014

Overview

Indicator title

2.7 Health-related quality of life for people with three or more long-term conditions.

Improvement area – Improving quality of life for people with multiple long-term conditions

Indicator family name

NHS Outcomes Framework – Domain 2: Improving quality of life for people with multiple long-term conditions

Outcome sought

Improved health-related quality of life for people with multiple long-term conditions.

Detailed Descriptor

Plain English description

This indicator measures health-related quality of life for people who identify themselves as having three or more long-standing health conditions. Health-related quality of life refers to the extent to which people:

- have problems walking about;
- have problems performing self-care activities (washing or dressing themselves);
- have problems performing their usual activities (work, study etc.);
- have pain or discomfort;
- feel anxious or depressed.

Technical description

The directly standardised average (mean) EQ-5D™ score for people self-reporting three or more long-term conditions.

Alignment with other Outcome Frameworks

Complementary to Adult Social Care Outcomes Framework Indicator 1A

Data sources

GP Patient Survey (GPPS) from Ipsos MORI (<http://www.gp-patient.co.uk/>) – Official Statistics

Published annually - from 2016/17 onwards one survey wave covers January – March, prior to this two survey waves per year covered July – September and January – March.

As of February 2018, further updates for this indicator are currently to be confirmed.

Construction

Calculation methodology

Introduction

This indicator is based on a large survey of adults registered with a GP Practice in England. The GP Patient Survey is commissioned by NHS England and is conducted by the independent survey organisation Ipsos MORI. Current and previous years' survey questionnaires are available from the link in the data sources section.

Patients are eligible for the survey if they have a valid NHS number, they have been registered with a GP in England continuously for six months or longer before the questionnaire is received, and they are at least 18 years old six months before the questionnaire is received. Additionally, to reduce survey fatigue, patients are not to receive more than one GP Patient Survey in any 12-month period. Details regarding eligibility, participation and sampling for the survey are available in a technical annex from the link in the data sources section.

Data filters

Data are filtered based on questions from the GP Patient Survey, to isolate those who report one or more long-term conditions. Respondents are identified as having a long-term condition if they answer 'Yes' to the following question.

Do you have a long-standing health condition?

- Yes
- No
- Don't know/can't say

If respondents fail to acknowledge their long-term condition in this question (those who answer 'No' or 'Don't know/can't say') but tick a condition in the next question, they are considered to have a long-standing health condition:

Which, if any, of the following medical conditions do you have? Please x all the boxes that apply to you:

- Alzheimer's disease or dementia
- Angina or long-term heart problem
- Arthritis or long-term joint problem
- Asthma or long-term chest problem
- Blindness or severe visual impairment
- Cancer in the last 5 years
- Deafness or severe hearing impairment
- Diabetes
- Epilepsy
- High blood pressure
- Kidney or liver disease
- Long-term back problem
- Long-term mental health problem
- Long-term neurological problem
- Another long-term condition
- None of these conditions
- I would prefer not to say

Note: Learning difficulty used to be presented as an option in the above list but was removed from the 2015/16 GPPS onwards as it is generally not considered a long-term condition

A count of conditions is derived from the number of illnesses selected. Only respondents ticking three or more illnesses have been selected for inclusion into this indicator.

All invalid responses (where there is no value for gender or age or any other of the breakdown variables) are excluded from the calculation.

Only people resident in an English region are included in the indicator (only includes records where GOR_Name <> Wales).

Calculation

Denominator

The denominator is the weighted count of responses from all people who identify themselves as having three or more long-term conditions:

$$\Sigma_k(wt_new_k)$$

where $k = 1, \dots, p$ are respondents with three or more long-term conditions.

Numerator

Health-related quality of life is measured using the EQ-5D™ instrument which asks respondents to rate their health in five different areas. The ratings are collected through the following question in the survey:

By placing an (x) in one box in each group below, please indicate which statements best describe your own health state today.

The possible responses are:

Mobility

- I have no problems in walking about
- I have slight problems in walking about
- I have moderate problems in walking about
- I have severe problems in walking about
- I am unable to walk about

Self-Care

- I have no problems washing or dressing myself
- I have slight problems washing or dressing myself
- I have moderate problems washing or dressing myself
- I have severe problems washing or dressing myself
- I am unable to wash or dress myself

Usual Activities (e.g. work, study, housework, family or leisure activities)

- I have no problems doing my usual activities
- I have slight problems doing my usual activities
- I have moderate problems doing my usual activities
- I have severe problems doing my usual activities
- I am unable to do my usual activities

Pain / Discomfort

- I have no pain or discomfort
- I have slight pain or discomfort
- I have moderate pain or discomfort
- I have severe pain or discomfort
- I have extreme pain or discomfort

Anxiety / Depression

- I am not anxious or depressed
- I am slightly anxious or depressed
- I am moderately anxious or depressed
- I am severely anxious or depressed
- I am extremely anxious or depressed

The answers to these questions are converted into an index by applying a formula that attaches values (also called weights) to each of the levels in each dimension. The weights are based on an empirical study, which asked people to quantify the extent to which they would sacrifice quantity of life in order to gain improvements in quality of life, at various states of health (see Dolan et al⁹ and Szende, Oppe and Devlin¹⁰ for details).

Individual EQ-5D™ index scores range between -0.594 and 1.000. The highest value is assigned to patients who report the best possible health state for each of the five domains.

The numerator is the sum of the weighted EQ-5D™ index values for all responses from people who identify themselves as having three or more long-term conditions.

This is calculated as: $\sum_i (EQ - 5D^{\text{TM}} \times wt_new_i)$

where $i = 1, \dots, m$ are respondents who identify themselves as having three or more long-term conditions.

2011/12 data are based on the EQ-5D-3L™ instrument, which provided respondents with three possible answers under each of the five domains. From 2012/13 onwards, the EQ-5D-3L™ was replaced with the EQ-5D-5L™ instrument which provides respondents with five possible answers under each domain as shown on the previous page.

⁹ Dolan P et al. 1995. A social tariff for EuroQol: Results from a UK general population survey. Discussion Paper No 138. Centre for Health Economics, University of York, York.

¹⁰ Szende, A., Oppe, M., and Devlin, N. 2006. EQ-5D™ value sets: Inventory, comparative review and user guide. Eds. EuroQol Group Monographs Volume 2. Springer, 2006.

Whilst preference weights for the new instrument are under development, a crosswalk to translate 3L index values into 5L index values has been devised. Details of the crosswalk methodology and results can be found on the EuroQol website:

http://www.euroqol.org/fileadmin/user_upload/Documenten/PDF/Crosswalk_5L/EQ-5D™-5L_Crosswalk_model_and_methodology.pdf.

EQ-5D™ is a registered trademark of EuroQol. Further details are available from <http://www.euroqol.org>.

EQ-5D™ is a registered trademark of EuroQol. Further details are available from <http://www.euroqol.org>.

EuroQol Group gave written permission to the Department of Health on 2 May 2011 to use the EQ-5D™ questions only in this format (without the visual analogue scale) for the GP Patient Survey and are happy for it to be referred to as EQ-5D™.

Weighting

A weight is applied to construct the indicator. The GP Patient Survey includes a weight for non-response bias (wt_new). This adjusts the data to account for potential differences between the demographic profile of all eligible patients in a practice and the patients who actually complete the questionnaire. The non-response weighting scheme has been developed by Ipsos MORI, incorporating elements such as age and gender of the survey respondent as well as factors from the area where the respondent lives such as level of deprivation, ethnicity profile, ACORN classification and so on, which have been shown to impact on non-response bias within the GP Patient Survey. Ipsos MORI are also investigating whether respondents have systematically different outcomes to non-respondents, even after the non-response bias weighting has been applied.

Further information on the current weighting scheme can be found in the survey's technical annex, available from the link in the data sources section.

The following document contains important information about the weighting methodology change in 2011-12:

<https://gp-patient.co.uk/weighted-data>

Standardisation

The indicator values are directly standardised. The directly age and gender standardised mean EQ-5D™ score is the score a standard population would have if that population were to experience the age and gender specific scores of the subject population.

The directly standardised score (DSS) is given by:

$$DSS = \frac{1}{\sum_i w_i} \times \sum_i \frac{w_i O_i}{n_i}$$

where:

O_i is the observed number of events in the local or subject population in age and gender group *i* (sum of weighted EQ-5D™ scores in the respective age and gender group for all respondents who identify themselves as having three or more long-term conditions)

n_i is the number of individuals in the local or subject denominator population in age and gender group *i* (sum of all weighted responses (wt_new) in the respective age and gender group for all respondents who identify themselves as having three or more long-term conditions)

w_i is the number of individuals in the reference or standard population in age and gender group *i* (sum of all weighted responses (wt_new) in the respective age and gender group for all respondents to the GPPS)

The standard population used for the direct standardisation method are all persons who responded to the GP Patient Survey in the respective financial year. The age groups used in the calculation are: 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, 65 to 74, 75 to 84, 85+.

Contextual Information

A contextual indicator showing the average health status score for all GP Patient Survey respondents at national level and for each of the breakdowns is calculated. This information aims to aid the interpretation by providing comparison of the health-related quality of life for people who identify themselves as having three or more long-term conditions to the whole GP Patient Survey population.

The survey response rate is measured as the unweighted number of total survey respondents as a percentage of the number of questionnaires sent. This is available at national level and for breakdowns by age, gender, lower and upper tier local authority as well as region. Survey response rates cannot be calculated for breakdowns by ethnicity, sexual orientation, religion and deprivation as the number of surveys sent out cannot be determined at these levels.

Presentation

Breakdowns

Time periods

Annual data from 2011/12

Demographic

10-year age bands from 18 - 24 to 85 and over

Gender (Males and females)

Ethnicity

Sexual orientation

Religion

Deprivation deciles (from 1 – most deprived to 10 – least deprived)

Geographic

England

Lower tier local authority

Upper tier local authority

Region

Disclosure control

For GPPS-based domain 2 indicators there are four different types of suppression that may be applied:

- Where several numbers are missing from the direct standardisation calculation, the values produced will not be robust. The direct standardisation used for this indicator is calculated by standardising values for each age and gender group within each breakdown and level. For some breakdowns, there may be some age-gender groups that don't have any respondents. If several groups have no respondents, the standardised figures will not be robust. For this reason, indicator values are suppressed when three or more age-gender groups within a breakdown and level have denominator values of zero.

An example of this with mock data for local authority X is given below. These figures would not be presented in the final data files; they are aggregated up by breakdown category in the final files.

Financial year	Local authority	Age band	Gender	Numerator	Denominator	Standard population
2013/14	X	18 to 24	Female	0.0	0.0	20,000
2013/14	X	25 to 34	Female	2.5	5.0	30,000
2013/14	X	35 to 44	Female	12.8	35.6	25,000
2013/14	X	45 to 54	Female	15.7	38.5	40,000
2013/14	X	55 to 64	Female	14.7	40.1	45,000
2013/14	X	65 to 74	Female	8.5	20.2	35,000
2013/14	X	75 to 84	Female	2.3	8.9	25,000
2013/14	X	85 or over	Female	0.0	0.0	10,000
2013/14	X	18 to 24	Male	0.0	0.0	20,000
2013/14	X	25 to 34	Male	0.0	0.0	30,000
2013/14	X	35 to 44	Male	15.6	34.7	25,000
2013/14	X	45 to 54	Male	20.1	45.9	40,000
2013/14	X	55 to 64	Male	8.7	16.3	45,000
2013/14	X	65 to 74	Male	4.0	8.7	35,000
2013/14	X	75 to 84	Male	0.0	0.0	25,000
2013/14	X	85 or over	Male	0.0	0.0	10,000

As there are more than two zero counts in the denominator column within local authority X, the indicator value for 2013/14 for this local authority needs to be suppressed.

Prior to the November 2014 publication, indicator values were suppressed where one or more age and gender group had a zero count.

- Where small numbers are used in the direct standardisation calculation, the values produced will not be robust. Small numbers are determined by looking at the values of the numerators at each breakdown and level once all the age-gender groups have been aggregated up - these are the numerators that are presented in the indicator data files. Where the numerator is less than 25 for any breakdown and level, the indicator values are suppressed.
- Where any breakdown and level in the data files is generated from less than 10 respondents (unweighted count), the indicator values, numerators and denominators are suppressed to minimise the risk of disclosing responses from specific individuals. The unweighted number of respondents is not presented in the data files.

When the above rule is applied to geographic breakdowns, secondary suppression is applied to prevent calculation of suppressed numerators and denominators.

Excel and CSV output

Column name	Output
Year	Respective financial year
Period of coverage	January to March for the respective financial year (July to March for years prior to 2016/17)
Breakdown	England, gender, age, ethnicity, sexual orientation, religion, deprivation decile, lower tier local authority, upper tier local authority, region
Level	Level of breakdown
Level description	Description of level of breakdown
Indicator value	Directly standardised mean health status score for individuals who have three or more long-term conditions
Numerator	Sum of weighted EQ-5D™ value
Denominator	Sum of weighted response (wt_new)
Average health status score for all GP Patient Survey respondents	Directly standardised mean health status score for all GP Patient Survey respondents
Survey response rate	Unweighted percentage of surveys returned

Domain 2 Appendices

Appendix 1 - Definition of each LFS variable used to construct indicators 2.2 and 2.5.i

LFS Variable Name	LFS Variable Definition
COUNTRY	Residential details – country within UK
MF1664	Males and females aged 16-64
INECAC05	Basic economic activity (ILO definition) (reported)
LNGLST (LNGLIM prior to Q2 2013)	Whether health problem lasting more than 12 months
HEAL	Lists the respondent's health problems
AGE	Age of respondent
SEX	Sex of respondent
UALA	Unitary authority/local area
GOVTOF	Government Office Regions – Summary
ETH11EW (ETH01 prior to 2011)	Ethnic group
NSSECM10	NS-SEC category
RELIGE (RELIG prior to 2011)	Religion
PWT17 (Q1 2017 – present) PWT16 (Q1 2016- Q4 2016) PWT14 (Q3 2014 – Q4 2015) PWT 11 (2011 – Q2 2014) PWT10 (prior to 2011)	Person weight

Appendix 2 - Primary diagnoses for chronic ambulatory care sensitive conditions for indicator 2.3.i

ICD-10 codes	Condition group and cause
Infections	
B180, B181	Chronic viral hepatitis B: Chronic viral hepatitis B with delta-agent (B180). Chronic viral hepatitis B without delta-agent (B181) (excludes people with a secondary diagnosis of D57 sickle-cell disorders)
Nutritional, endocrine and metabolic	
E10, E11, E12, E13, E14	Diabetes: Insulin-dependent diabetes mellitus (E10), Non-insulin-dependent diabetes mellitus (E11), Malnutrition-related diabetes mellitus (E12), Other specified diabetes mellitus (E13), Unspecified diabetes mellitus (E14)
Diseases of the blood	
D501, D508, D509, D51, D52	Iron deficiency anaemia: Sideropenic dysphagia (D501), Other iron deficiency anaemias (D508), Iron deficiency anaemia, unspecified (D509); Vitamin B12 deficiency anaemia (D51), Folate deficiency anaemia (D52)
Mental and behavioural disorders	
F00, F01, F02, F03	Dementia: Dementia in Alzheimer disease (F00), Vascular dementia (F01), Dementia in other diseases classified elsewhere (F02), Unspecified dementia (F03)
Neurological disorders	
G40, G41	Convulsions and Epilepsy: Epilepsy (G40), Status epilepticus (G41)
Cardiovascular diseases	
I110, I50, J81X, I130 (excluding OPCS4 codes: K0, K1, K2, K3, K4, K50, K52, K55, K56, K57, K60, K61, K66, K67, K68, K69, K71).	Congestive heart failure: Hypertensive heart disease with (congestive) heart failure (I110), Heart failure (I50), Pulmonary oedema (J81X), Hypertensive heart and renal disease with (congestive) heart failure (I130)
I20, I25. OPCS4 codes excluded: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, V, W, X0, X1, X2, X4, X5	Angina: Angina pectoris (I20), Chronic ischaemic heart disease (I25)

ICD-10 codes	Condition group and cause
I10X, I119. OPCS4 codes excluded: K0, K1, K2, K3, K4, K50, K52, K55, K56, K57, K60, K61, K66, K67, K68, K69, K71	Hypertension: Essential (primary) hypertension (I10X), Hypertensive heart disease without (congestive) heart failure (I119)
I48	Atrial fibrillation and flutter
Respiratory diseases	
J20, J41, J42X, J43, J44, J47X. J20 only with second diagnosis of J41, J42, J43, J44, J47	Chronic obstructive pulmonary disease: Acute bronchitis (J20), Simple and mucopurulent chronic bronchitis (J41), Unspecified chronic bronchitis (J42X), Emphysema (J43), Other chronic obstructive pulmonary disease (J44), Bronchiectasis (J47)
J45, J46X	Asthma (J45). Status asthmaticus (J46)

Appendix 3 – ICD-10 codes for indicator 2.3.ii

ICD-10 codes	Condition group and cause
Nutritional, endocrine and metabolic	
E10	Diabetes
Neurological disorders	
G40, G41	Epilepsy
Respiratory diseases	
J45, J46X	Asthma